# NOTES ON THE CRABS OF THE FAMILY INACHIDE IN THE UNITED) STATES NATIONAL MUSEUM. 

By Mary J. Rathbun, Aid, Department of Marine Invertebrates.

In this paper two new genera and eight new species are described. No attempt has been made to give a complete list of the specimens in the Musenm. Only those described species are noticed for which it was possible to record new localities or add notes to supplement original deseriptions and aid in identification. The repetition of matter which has already appeared in the proceedings of the Mnsenm and the bulletins and reports of the U.S. Fish Commission has been avoided. The following is a list of speeies which appear in this paper. Those marked with a* are species deseribed by Stimpson, the types of which were destroyed in the Chicago fire, and which were monnown from that time mutil rediseovered by the Albatross:

## List of species.

Leptopodia sagittaria, (Filbricius). debilis, smith. Metoporhaphis calcaratus, (Say). Achrus tuberculatus, Miers. trituberculatus, new species. Podochela riisei, Stimpson. spatulifrous, A. Milne-Edwarils.

* liypoglypha, (Stimpson).
* lamelligera, (Stimpson). macrodera, Stimpson. gracilipes, Stimpson. spinifrons, new species.
Collorles depressus, A. Milne-Elwaris. robustus, Smith.
leptocheles, new speries. (lonbtfulspecies.)
*Batrachonotus fragosus, Stimpson. brasiliensis, new species. nicholsi, new species.
Euprognatha rastellifera, stimpson. rastellifera spinosa, new subspecies. gracilipes, A. Milne-Edwards.
A rachnopsis filipes, Stimpson.
A pocremnns septemspinosus, A. Milue-Edwarls. Inachoides intermedius, new species.
Anasimus latus, new species.
Eurypodius latreillei. Guérin: Oregonia gracilis, Dana.

Anamathia crassa, A. Milne-Edwaris. hystrix, (Stimpson). umbonata, (Stimpson).
Trachymaia cornuta, A. Milne-Edwards.
Lispognatlus thomsoni, (Norman).
Holopiltes armatus, (A. Milne-Edwards).
Clurinus heros, (Herbst).
Trichoplatus huttoni, 1. Milne-Edwards.
Anomalothir fureillatus, (Stimpson).

* Mocosoa crebripanctata, Stimpson.

Sphenocarcinus corrosus, A. Milne-Edwards.
Simocarcinus simplex, (Dana).
ECHINGECUS pentagonns, new gemns and speries.
Epialtus bitubereulatus, Milne-Edwards.
productus, Randall.
(Antilibinia) dentatus, (Milne-Elwards). marginatus, (Bell). muttallii, (Randall).
Pugettia gracilis, Dana.
richii, Dana.
quadridens, (De Haan).
foliata, (Stimpson).
Acanthonyx petiverii, Milne-Edwards.
Neorhynchus depressus, Bell.
Pyromaia cuspidata, Stimpson.
Loxorhynchus grandis, Stimpson. crispatun, Stimpson

## Family lnactudad.

## Subfamily Lertopomionde.

 LEPTOPODIA SACITTARIA, (F’abricius).Cancer sugftarius, l'abmicules, (Entom. Syst., I1, p. 442, 1793).
Leptoporlire sugitturia, Leacil, Zool. Misr., 11, p. 16, pl. Ixvil, 1815.-A. MilneE円WARIs, Cmst. du Mexípue, p, 172, $1 \times 7 \times$ (partim), and symmymy, except L. sugitturie, Mline-Edwabds ind Letess, and L. debilis, Smitm.

Incalitics.
From off Cape Hatteras to the Caribbeansea: I'. Fioh Commission steamer Jlbatross:

| Cat. <br> No. | Station. | Lat. N. | Lougr. W. | Fath. | Tепи. | Bottom. <br> Materials. | Jate. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 6934 | 2142 | $93015$ | $76 \quad 20 \quad 30$ | 12 | ${ }^{\circ} \mathrm{F}$. | gr. M. | $\begin{aligned} & 1884 . \\ & \text { Mar. } 23 \\ & 1885 . \end{aligned}$ |
| 17524 | 2311 | 325500 | 75 5.4 00 | 79 | 59.1 | crs. S. bli. sp | Jan. 5 |
| (9459 | 2315 | 242600 | 814815 | 37 |  | Co | 15 |
| 9464 | 2316 | 242530 | 814745 | 50 | 74 |  | 15 |
| 9467 | 2317 | 242545 | 814645 | 4.5 | 75 | Co | 15 |
| 9475 | 2318 | 242545 | 814600 | 45 | 75 | Co | 15 |
| 14975 | 2354 | 205930 | 862345 | 130 |  | Co | 22 |
| 17401 | 2362 | 220830 | 865330 | 25 |  | Co.s. | 30 |
| 17405 | 2:16:3 | 220730 | 870600 | 21 |  | wh. R. Co | 30 |
| 17374 | 2365 | 22 1800 | 870400 | 24 |  | wh. R. Co | 30 |
| 9602 | 2:370 | 291815 | 853200 | 25 |  | crs. cy. S. brk | Fel. 7 |
| 9613 | 2372 | 291530 | 852930 | 27 |  | Cr | 7 |
| 14976 | 2373 | 291400 | 852915 | 25 |  | Co | - |
| 17525 | 2374 | 291130 | 852900 | 26 |  | S. G. brk. Sh | 1 |
| 9689 | 2387 | 292400 | 880400 | 32 |  | S. G. brk. Sh. | Mar. ${ }^{4}$ |
| 17402 | 2390 | 292730 | 874830 | 30 |  | crs. S. hk. Sp. sl | 4 |
| 17403 | 2405 | 284500 | 85.0200 | 30 |  | gy. S. brk, Co | 15 |
| 17375 | 2406 | 284600 | 844900 | 26 |  | crs. S. Co... | 15 |
| 17404 | 2411 | 263330 | 831530 | 27 |  | fur, wh. S. lok. Sl | $1{ }^{18}$ |
| 11303 | 2413 | 260000 | 825730 | 24 |  | fne. s. bk. Sp. brk | 19 |
| 9863 | 2417 | $\begin{array}{llll}33 & 18 & 30\end{array}$ | 770700 | 95 | 65.8 | fine.gy.s | Apr. ${ }^{2}$ |
| 17373 | 2596 | 350830 | 751000 | 49 |  | gy. | Oct. 17 |
| 11219 | 2604 | 343730 | $75 \quad 3945$ | 34 |  | yl. S. brk. Sh | 18 |
| 17526 | 2616 | 334245 | 773100 | 17 |  | S. 1 | 20 |
| 11227 | 2617 | 333730 | 773630 | 14 |  | crs. yl. S. brk. | 20 |
| 11232 | 2621 | 338400 | 774200 | 0 |  | gy. S. brk. | 1886. |
| 11379 | 2640 | 250500 | 801500 | 56 |  | Co. S | Apr. 9 |

St. Thomas; steamer Albatross (7653).
Brazil; Hartt Explorations:
Maranhano, 2 fathoms, pebbly; Derby and Wilmot, 1870.
Mar Grande, Bay of Bahia; Richard Rathbun, $1875-77$.
Periperi, bay of lahia; R. Kathloun.
Bay of Rio do Jameiro, Iredged, shallow water; R. Rathbnn.

## LEPTOPODIA DEBILIS, Smith.

Leptoprodia debilis, Smitu, Rept. Peabody Acad. Sci. for 1869 and 1870, p. 87, 1871.
Twenty specimens were collected by the steamer Albatross on the coast of Lower C'alifornia.

These specimens agree in having the hand shorter and broader than in east eoast specimens of $L$. sagittaria, and the fingers proportionally longer. The propodus is usually about twice the length of the dactylus and varies to $2 \frac{1}{2}$ times that of the dactyhns in the largest sperimen; in L. sugitturin the propodus is usually about $2 \frac{2}{3}$ times the length of the dactylns, but varies from $2 \frac{2}{2}$ to 32 times. The ambulatory legs are
shorter in the west coast forms. Those of the first pair are from 6 to $7 \frac{1}{2}$ times the length of the carapace, while in the Atlantic speceses they are from $S$ to $8_{\frac{2}{3}}$ times the length of the carapace. The rostrum is shorter in the specimens of $L$. debilis in this collection than in most of those of L. sagittaria. The rostrum is usually about the same length as the carapace or exceeds it but little, in two instances reaching a length of $1 \frac{1}{2}$ times the carapace. Prof. Smith, however, describes the rostrum of $L$. debilis as about twice as long as the posterior portion of the carapace.

In our specimens the surface is more pubescent than in $L$. sagittaria, especially the chelipeds of adult forms, and the carapace is usually more swollen at the branchial regions and the rostrum more upturned.
A. Milne-Edwards considers the Leptopodice from the west coast of Mexico and Central America as the same species as those from the east coast, setting aside as distinet the Chilean form, the L. sagittaria of Milne-Edwards and Lueas, and calling it L. modesta : conserquently his insertion on the same page of the L. sagittarin of Milne-Edwards and Lucas in the synonymy of Leptoporlia sagittaria is erroneous. Some of the specimens from the Gulf of California so resemble the figure given in d'Orbigny's "Yoyage" that it may be proved that a single species inhabits the west coast of America, which, in the present state of our knowledge, it seems best to eonsider distinct from $L$. sagittaria.

The following are the dredging stations at which this species was obtained:

| t. | Station. |  |  | Bottom. |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| No. |  | Lat | Long. W. | Fath, | 'Temp.' | Materials. | bate |
|  |  | 311 | - 1 " |  | $F$. |  | 1889. |
| 17322 | 3002 | 250215 | 1104330 | 17 |  | S. Sh. | Mar. 17 |
| 16024 | 3005 | 250245 | 1104330 | 21 |  | S. Sh. Coralline. | 17 |
| 18067 | 3014 | 282800 | 1120430 | 29 | 62.9 | gy.s. | 23 |
| 15544 | 3026 | 312200 | 1140745 | 17 | 65. 2 | (1. brk. Sh. | 25 |
| 17323 | 3041 | 243530 | 1120500 | 27 | 64.5 | fue. gy. | Apr. 9 |

METOPORHAPHIS CALCARA'AS, (Say).
Leptopodia calcarata, SAy, Jour. Acarl. Nat. Sci. Phila., i, P. 455, 1^17.
Metoporhaphis calcarate, Stimpson, Ann. Lyc. Nat. Hist. N. Y., V11, 1. 198, 1860.Smith, Rept. U. S. Commr, of Fish and Fisheries for 1885 (1887), f. 620 (Metoporhapis calcaratus).-1. Milne-Edwards, op. cit., p. 174, 1878 (calcaratus).—Mers, Challenger Rept., XVir, p. 4, 1886 (Metoporaphis).
The specimens of Metoporhophis examined represent eleven localities and agree in the characters given below.

Besides the four gastric tubereles and the large tuberele on the cardiac region, there is a postorbital tuberele remote from the orbit and slightly in advance of the gastric tubereles; two hepatic tubereles, one of which is marginal; three branchial tubercles, one marginal and the other two nearly longitudinal; a subbranchial tuberele in ardance of the marginal tuberele; the pterygostomian ridge is provided with a
tuberele and there is a srambe in frome of the angle of the bue cality. The rostrom bears tom or five slember spines, which project mutwardly in all alternate series trom the 口posite sides of the lower surtare: they are not always apparent in small specemens; two of these spines are near together close to the extremity, and sometimes give the rostrum the anpearance of being tritid at the extremity. The basal antemal joint has a spine below midway of its length and another at its onter distal angle. The two last segmemts of the ablomem in the male are coalesced; on the sternm, in front of the abomen, are two or thre spines on either side, wheh form comberging lines paralle to the terminal segment of the abdomen. The secomb, thind, and fometh segments in the female abdomen are very shom and about equal in lengeth: the last thee segments are coalesoent. The merns of the maxilliped is longer and less deeply wh than in A. Milne-Edwardses ligure of $1 /$ fimficuletus: the tirst joint of the palpus is alsor much longer.
Chelipeds in the mate stont. The iselhmm and merns have sharp spines on the moter margin which become obsolete near the carpus; they have small spines on the imer lower margin, and the merns has one hong spine at the emo of its apper suffere. The maphe has a series of sharp spines on its inner and outer margins, and one near earh extremity of its unger suffere. The mams is hoad and indated, with long spines above, and short ones below interspersed with long hairs. Fingers about as long as the palm: the prehensile edges are fimioned with trumate dentienlate teeth exeept at the extremities. where the berome chasely fitting triangular teeth. The chelipeds of the female are much feebler, the fingers much lomger and move gaping, with sharp spines on the prelwemsite edges.
 19.5 mm. : length ot restrum, 11 : width, s.: $:$ : lengeth of che liped alout 21.5 .

Lnerslities.

[^0]ACHLELS TURERCULATLS, Mirrs.
 Jahrlo., VII, 1, p. id, 18:13.
To this species I have referred al single, imperfect, dried specimen (No. 180 io) from Japan, collected by the liev. II. Loomis. The randiate and gastric tubereles are gramulate at the smmmit ; there is a small low tubercle on the branchial region near the inner angle, and another near the posterior margin. The hepatic region is swollen; its projection is broad, grambate on the matein, and somewhat bilobate from it a gramuate ridge rums diagonally to the posterion extremity of the superior orbital border. The inferior surface of the carapace bears several tubereles and grammes near the matein. The rostral teeth are gramulate and curved inwards, so that the interspace is almost oral; rostral grooves deep. Secoad joint of anteman not quite equaling the rostrum. Eyestallis stout, bearing a small tubere above near the extremity. Abdomen of male very broad; terminal segment narrowing towand the proximal end, distal angle bearing a smooth prominence; distal margin arcolate in its middle half.

Chelipeds very large. Merns much larger than the palm, spinulous on the margins and with a large lobe at the distal end of the onter surface. Carpus spinulous on inner margin, a few tubereles on proximal half of outer surface, and a tuberenlous lobe at the articulation with the manms. Mamus inflated, spimulons above; palmar portion exeed ing the pollex but little; digits with a longitidinal sulens on the outer smrlace, prehensile edges toothed and fitting together. The ambulatory legs are for the most part missing. The dactyl of the last pair is long aud slightly curved.

Mensurements.-Length of (:aripare, lif mon.; width, 10.5; length of dactel of fourth ambulatory leg. 6 .

This individual corresponds to Miers's hried description taken trom impertert specimens, exepting that he defines the eye-peluncles as smooth. In the specimen at hand, the tuberele at the tip is so inconspicnons that it might have been overlooked.

ACLERE TRITLBERCVLATLS, Hew speries.
Carapace narrower that in $A$. japonicus, not constricted behind the orbital area; regions well maked but not protuberant; gastrie and bramehial regions smootli cardiace region with three low tubereles, the posterior one on the median line; hepatie region with a broad obtuse prominence. Rostral bobes spinulous on the margin, separated by a V-shaped simm which is marower than either bobe. Rostral grooves deep. Eye-peduncle with at sharp pointed tuberele on the upper side near the cornea. The pednucle widens toward the cornea, which is very oblique, directed downwatd and inwarl. Second joint of the antenat equaling the rostrim. The abdomen of the male is narrower than in the specimen I have named $A$, tuberoulatus, and does not widen at the
terminal segment as in that speeies．The cheliped is of moderate size， spimblons．The palm is mutilated．The fingers have thin outer mar－ gins，concave suffuces，amd denticnate immer edges．The first pair of ambulatory legs is nearly fome times the length of the rarapace，the second pair but little shorter than the first，third and fourth pairs nearly equal in length，the last par a little more than twice as long as the earapace．The dactyli oí the last two pains are falciform．

Mensurements．－Length，10．5；width， 7.5 mm ．
Lorality．—Kanada Bay，Japan；dredged in 10 fathoms，mulf； 1 male（ $1446: 3$ ）．

This species approaches A．lucertosus，Stimpson，in having no spines on the carapace and in the form of the ambulatory legs，but that species is narrower，withont tubereles on the gastrie region，or a tuberele on the eyr．

## JODOCHELA RIISEI，Stimpson．

Porlochela riisei，Stmpson，Aun．Ly̌c．Nat．Hist．N．Y．，Vir，p．1116，j1．11，fig．6，
 1879 （reisei）．—Mers，Challcu！er Rept．，Zool．，x＇11，1．1I， 1886.
 Linn．Soc．Lonton，xバ，1．643， 1879.
 s•i．Pluila．，xNxi，p．384， 1879.
The basal antenual joint is much more diated at the postero－external angle than is represented in A．Milne－Eilwarls＇s figure．

Mexsurementr．－Length（of male）， $14.6 \mathrm{mm}$. ；width， 11.2. Length（of female），17．s；width，13．s．

## Localities．

l＇ensacola，Fla．， 3 to $t$ fathoms；James E．Bemodict，July， 1 sus．
Gulf of Mexion and Caribbean Sea at the following stations of the stramer Albatross：

| Cat．No． | Station． | Lat．N． |  |  | Lohs．W． |  |  | Fathoms． | Nature of lmotom． | 1）ate． |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | ， | ， | ＂ |  |  | 1885. |
| 18147 | 2303 | 22 | 07 | 30 | 87 | 06 | 00 | 21 | wh．İ．Po． | Jalı． 30 |
| 15163 | 239， | 29 | 27 | 30 | 87 | 48 | 30 | 310 | ers．s．hk．Sp．Sh． | Mat． 4 |
| 1 18073 | 2411.5 |  |  | 00 |  |  |  | 30 | gr．S．lork．Co． | 15 |
| 9794 | 24Ut |  | 46 | 00 |  | 49 | 00 | 26 | crs．S．Co． | 15 |

On aceomet of the diversity of form presented by the rostra of the vamons species of this gems，it seems best not to retan the name Coryrhymulus as a subgeneric designation．

POHOCHELA SPATLLIFRONS，A．Milnr－Fd wards．

The $\quad 1 p$ mer surface of the earapace resembles that of $P$ ．risei；the prominences are tnberenliform and not spiniform，as in adnlt sperimens of $I^{\prime}$ ．riasci．The basal antemal joint is reetangular at its anterior ex－ tremity and is of nearly equal width throughont its length，while in $L^{\prime}$ ．risei it is narowed and romded anteriorly and expanded at the
postero-lateral margin. A tubercle in $P$. spectulifions takes the place of the pterygostonian ridge in $P$. riesei. In the male the manns is swollen, and the fingers are slightly gaping. The stermum and abdomen are much like those of $P$. riise $i$.

Measurements.-Length (of make), 13 mm.: width, 9. Length (of female), 20 ; width, 16 .

Loculities.


I'ODOCHELA IHPO(iLYPILA, (Stimpson).
P'odonemu hypoglypha, Stimpon, Bull. Mns. Comp. Zonl, if, p. 127, 1870. I'odochela hypoglypha, A. Milne EDWAinds, op. cit., 1. 194, 1879.
Menswrements.-Length (of male), 20 ; width, 14 mm .
Localitics.
Key West, Florisla; 1. S. Jordan, Der., 1883 (15162).
Cerlar Keys, Florida; Lient. J. F. Moser, U. S. N., I. S. C'oast Eurvey steamer Buche, Feh. 1887 (18074).
West Coast of Florida; Henderson amd Simpson (18075).
PODOCHELA LAMELLIGERA, (Stimpson).
Iodonema lamelligera, Stimpson, Bull. Mus. Comp. Zool., 11, p. 126, $1 \times 70$. Podochcla lamelligera, A. MnNe-Edwards, op. cit., p. 193, $1 \times 79$.
This species is readily distinguished from the foregoing. The rostrum is marrower and pointed, thongh hollow underneath. The basal antennal joint has a small acute tooth projecting formard from its anteroexternal angle; the laminiform margins are rery prominent, especially the imer one, which is rleepest at about the middle of its length, at which point there is a transrerse crest on the joint. The partition between the antemular fossar is prolonged downward at the middle in a sharp tooth. The two small tubercles present in the preceding species at the extremity of the epistome are in $I$ '. lamelligern much enlarged, firming large triangular laminiform projertions, the anterior one not far behind the orlit, the posterion one lower down. The hepatic projection forms a slender spine. The angle of the buceal cavity is cristate and the pterygostomian crest bears a large tooth in the middle of its lengtl. It the base of each cheliped there are two thin plates projecting downward and inward, and two on the sternum at the extremity of the male abdomen. The sternal plates are broad, thin, bearing spinules, their posterior margins turned downward and overlapping the next plate. The coxal joint of each ambulatery leg is furnished on the lower side with a cup-shaped expansion.

Mensurements.-Length (of male), 18 mm.; width, 12.5; length of cheliped, aboul 18. Length (of female), 20 : width, 16 ; length of cheliped, 23 ; length of first ambulatory lage, 60 ; length of merns, 20 ;

$$
\text { Proc. N. M. } 94-4
$$

 42；length of mems， 17 ；earpus， 7 ；pouodus， $1: 3$ ；dactylus， 3.5 ；length of third ambulatory leg， 35 ；length of merus， 13.2 ；carpus， 6.5 ；pro－ porlus， 10 ；dactylus， 3 ；length of fomth ambulatory leg，32；length of merns， 11.3 ；carpus，（i；propodus， 9 ；dactylus，巳．

This species was collected in the Gulf of Mexico and Strats of Florida by the steamer Albatross，18s5，as follows：

| C＇at．No． | Station． | Lat．N． | Long．W． | Fiathoms． | Nature of lottom． |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 18076 | 2317 | 242545 | 814645 | 45 | f＇0． |
| 18077 | $\because 415$ | 284500 | 850200 | 30 | gy．S．brk．C＇o． |

## PODOCHELA MACRODERA，Stimpson．

Podochela macrodera，Sthoson，Amb．Lyc．Nat．Hist．N．Y．，vir，p．19\％，1860．－A． Milne－EnWaris，op．cit．，f．191，pl．ג入入ル，fig．3， 1879.
In this species the rostrom is thick，obtuse，short，and not hollow be－ neath．There is a white tubercle on the median line at the end of the first abdominal segment in the male；also two on the stermm in fiont of the abdomen．The hands are much intlated and the fingers gaping． The basal antemal joint in these specimens is narrower distally than in A．Milne－Edwards＇s figure，the lateral ridges are smooth and romeded and coalesced for their anterior thim．There is a small tubercle on each side of the epistome．

Meuswrements．－Length（of male），15．2 mu．；width， 11.

## Localities．

Key West，Florida；11．s．Jordan； 1 male（6368）．
St．Thomas，West Indies；U．S．Fish Commission steamer Albutross，1884； 1 mate （18078）

## PODOCHELA GRACILIPLE，Stimpson．

Potochela gracilipes，stmpson，Bull．Mns．Comp．Zool．，it，p．126，1～70．－A．Mine：－ EwWARDs，op．cif．，1．192，pl．ג犬※v，fig．1， 1879.
In the larger specimens the two small tubereles at either end of the epistome，and also the projecting angle of the lonceal ravity are visible in a dorsal view．

Measurements．－Length of largest specimen，1シ̈． 5 ；winth，s mm．

## Localities.

Off Soutli Carolina to the Gnlf of Mexico and Caribbean sea, U. S. Fish Commission steamer Albatross, 1884-1886, at the following stations:

| Cist. No. | Station. | Lat. N. | Long. W. | Fatboms. | Niture of bottom. | 1)ate. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | - , " | - 1 " |  |  |  |
| 7789 | 2142 | 93015 | 762030 | 42 | gn. M. ふ. | Mar. 2 |
| 18079 | 2311 | 325500 | 775400 | 79 | crs. $\mathrm{S}_{\text {c }}$ bk. Sp. | Jan. is |
| 18180 | 2360 | 290830 | 864900 | 26 | wh. Co. | 31) |
| 18081 | 2363 | 220730 | 870600 | 21 | wh. R. (\%o. | 30 |
| 18082 | 2365 | $\because 1800$ | $870 \pm 00$ | 24 | wh. li. Co. | $31)$ |
| 1808: | 2370 | 291815 | 853200 | 25 | crs. gry S. brks. Sh. | Febr 7 |
| 18084 | 237: | 2915 \% | 852930 | 27 | G. | 7 |
| 18085 | 2373 | 291400 | 85.9915 | 25 | C'o. | - |
| 18086 | 2388 |  | ss 0100 | 35 | sl. S. bk. Sp. | Mar. 4 |
| 181087 | 2:90 | 292730 | 874830 | 30 | irs.s.luk.sp. sh. | 4 |
| 1808 ${ }^{\circ}$ | $\underline{2405}$ | 284500 | 850200 | 30 | gy. S. brk. Co. | 15 |
| 18189 | 2406 | 284600 | St 4900 | 26 | crs. | 1.5 |
| 18090 | 2407 | 284730 | 843700 | 24 | Co.brk. Shr | 1.5 |
| 18091 | 2412 | 261830 | 830845 | 27 | the. es. S. lok.sp.lrk.Nh. | 19 |
| $180!2$ | 2413 | 260000 | 825730 | $\because 4$ | fne. S. hk. s. brk. sin. | 15 |
| $18: 993$ | 2414 | 250430 | 825915 | 36 | fne. wh. S. brk. Sh. | 19 |
| 11408 | 2639 | 250450 | so 1516 | 56 | Co.s. | Ajr. ${ }^{\text {a }}$ |

PODOCHELA SPINLFRONS, new species.
Carapare spinnliferons. Cardiae region with an rect spine; gastrie region with a spine directed forward and a spiny tuberele in front of the latter. The rostrum is long and sharp, arched, with a median spiniferons crest. Orbits with an erect spinuliferons crest, bearing two slender spines. The antemal joint is largely visible from above and carries appine at its anterior angle. There is an oblong laminiform postorbital tooth and behind and below it a flat triangular tooth; these two teeth correspond in position to the small tubercles present in $P$. gracilipes and other species. The hepatic spine is narmow, flattened and obtuse, and the pterygostomian region has a similar spine. The bucal eavity is conspicmonsly crested at its anterior angle. The antemal joint has a cristiform inmer margin and an angular ridge on its posterior half. The stemal crests in the male are flat, tuberenlons, and separated by deep sulci. The coxal joints of the legs bear crests similar to those in $P$. lamelligera, but less prominent. The anterior part of the sternmm in the male is pubescent, and has two stont spines in front of the abdomen, which project downsard and forward. The first segment of the abdomen bears a spiniform tubercle at its distal extremity. The rhelipeds in both sexes are slender, hirsute and spinnliferous; fingers with prehensile edges in contact. Ambulatory legs very hairy, except the slender yellow horny tips of the dactyli. Propodal joints slender, dactyli slightly cured.

Mcosurements.-Length (of male), $22 \mathrm{mm}$. ; width, 15 ; length of cheliped, 26 ; length of merns of first ambulatory leg, 2.5 ; carpus, S.5; propodus, 34 ; dactylns, 11.5; length of merms of second ambulatory leg, 23; carpus, 10 ; propodus, 21 ; dactylus, 5.7 ; length of merus of third ambulatory leg, 20 ; carpus, 10.8 ; propodus, 15 ; dactylus, 4.5 ; length of
merns of fonth ：mmbuatory leg，18；carpus， 10 ；propodus， 13 ；dactylus， 4 ；length（of fenale）， 24 ；width， 16.5 ．Length（of female）， 21 ；width， 13.5 ：length of rostrum， 5 ．

## Localities．

West Indies and Caribhean Sea；U．S．Fish Commission stommer Albatross，1884， 1885 ，as follows：

| Cit．No． | Station． | Lat．N． | Long．WV． | Fathoms． | Nature of bottom． | Sex． | Date． |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | द 1＂ | 1 11 |  |  |  |  |
| 694.5 | 2167 | 231040 | 823030 | 201 | Co | 18 | May 1 |
| \＄9510 | 2337 | $\because 31039$ | 822021 | 199 | Co | 18 | Jan．19 |
| $1 \times 094$ | $2: 354$ | 205930 | 869345 | 130 | （ 10 | 1 f | 20 |

## Subfamily Inachunde．

COLLODES I）EPRESSLE，A．Milue－Edwards．
Collodes depressus，A．Mine－Emwarns，（＇rust．du Mexírie，p．17t，pl．xixir，fig． 4，1878．－Smiti，Proe．U．S．Nat．Mns．，vi，1י．5，8， 1883 ；Rept．V．S．Fish Commr．for 1885 （ 1887 ），1， 621.
Meusurements．－Lengtl（of largest male），14；width，11．5．Length （of largest female）， 12 ；wilth， 9.7 mm ．

## Localities．

Off Cape Hatteras，N．C．．to the Culf of Mexico；l．S．Fish Commission steamer Albatross，as follows：

| Cat．No． | station． | Lat．N． | Lomg．W ． | Bottom． |  |  | Date． |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Fathoms． | Temp． | Matrrials． |  |
|  |  | ＂ | －＇ |  | ${ }^{\prime} \mathrm{F}$ ． |  | 1885. |
| 18095 | 2311 | 32.5500 | 775400 | 79 | 59.1 | crs．S．bk Sp | Jan． 3 |
| 18096 | 2370 | 291815 | 853200 | 25 |  | ers．my．S．lork．Sh | Fel． 7 |
| 18197 | 2372 | 29.1530 | 852930 | 27 |  | G | Fel） 7 |
| 18098 | 2374 | 291130 | 852900 | 26 |  | S．Mr．brk．Slı | Feb． 7 |
| 9783 | 2405 | $2 \mathrm{2c} 4500$ | 850200 | 30 |  | ${ }_{6} 9.5 . \mathrm{S}$ ．brk．Co | Mar． 15 |
| 18099 | 2413 | 260000 | 835730 | 34 |  | fres．S．bk．Sp．brk．Sh． | Mar． 19 |
| 18100 | 2596 | 350830 | 7510 | 49 |  | gy．S．．． | Oct． 17 |

This species is probably identical with C．trispinosus，Stimpson．

## COLLODES ROBUSTUS，smith．

Collodes depressins，Emiti，Proc．U．N．Nat．Mus．，11，1．414，1881．（Not A．Miline－ EゅWA！ル心）


## Localitics．

Off Chesapeake bay at the following stations of the U．S．Fish Commission steamer Albatross：

| （Aat．Ň． | station． | Lit．${ }^{*}$ ． | Lons．W． | Iottom． |  |  | Date． |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Fathoms． | Temp． | Materials． |  |
|  |  |  | $\text { it } 3140$ | 10.1 | $\begin{aligned} & \circ F . \\ & 47.7 \end{aligned}$ | Wk．S．M．G | ${ }_{\text {Aliril }} 1885$ |
| 10085 | 2121 | 37 07 <br> 170  | $74 \quad 34 \quad 30$ | 64 |  | fne．gy S．${ }^{\prime}$ | June 3 |
| 1515 | $\because 2$ |  | 74 3：30 | 85 | 52.5 | crs．gy．S．bk．Sp．brk．Sh． | June 3 |

## COLLODES LEPTOCHELEN, new Aperis's.

Collodes robustus, Smith, of the Atlantic coast of North America, is replaced in the Gulf of Mexico by a closely allied species. The rarapace is similar in shape to that of C. robustus. Snrface tubereulous, withontspines. Rostrm divided by a $V$-shaped notch into two acute teeth shorter than in C. robustus, their outer margin eonvex. Postorbital tooth broad and long, much exceeding the eyes. The abdomen of the male is broader than in C. robustus, constricted at the fifth segment; a small spine or tuberele on the first segment, and a long spine on the fifth directed downward and backward. The appendages of the first segment are more divergent than in C.robustus, and more slender at the tips. There is a small spine on the fifth segment in the female. The chelipeds are weak in both sexes, about as long as the carapace; manus slender, fingers as long as the palm. Ambulatory legs stouter than in C.robustus, the first and second pairs nearly equal in length, the secomd often exceeding the first, about twice as long as the carapace; dactylus of last two pairs longer than the propodus. The color in alcohol is a pale écru, while C. robustus is yellowish.

Measurements.-Length of carapace (of male), 16.5 mm ; width, 12.7; length of cheliperl, 17 ; length of first ambulatory leg, 34.7 ; second, 35 ; third, 31.5 ; fourth, 30.7 ; length of propodus of third ambulatory leg, 6.5 ; dactylus, 7.2 ; length of propolus of fourth ambulatory leg, 6.7; dactylus, 7.7. Length of earapace (of female), 17. 5 ; width, 13.2; length of cheliped, 17 ; length of first ambulatory leg, 31.5 ; second, 35 ; thirt, 32.5 ; fourth, 30 .

## Localities.

Five stations in the Gulf of Mexico, as follows:

| Cat. No. | Station. | Lat. N. | Long. W. | Fathoms. | Nature of bottom. | Date. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 2 1/ | - , " |  |  | 1885. |
| 18101 | 2378 | $29 \quad 14 \quad 30$ | $88 \quad 09 \quad 30$ | 68 | g.v. M | Fel. 1] |
| 9748 | 2400 | $\begin{array}{llll}38 & 41 & 00\end{array}$ | $86 \quad 0700$ | 169 | gy M | Mar. 14 |
| 9751 | 2401 | $\begin{array}{llll}28 & 38 & 30\end{array}$ | $85 \quad 52 \quad 30$ | 142 | gn. M. brk. St | Mar. 14 |
| 18102 | 2402 | $\begin{array}{lll}28 & 36 & 00\end{array}$ | $\begin{array}{lll}85 & 33 & 30\end{array}$ | 111 | gy. M | Mar. 14 |
| 18103 | 2403 | $28 \quad 4230$ | $85 \quad 29 \quad 00$ | - 88 | gy. II | Mat. 15 |

COLLODES, doubtful species.
Four small dried specimens frmm the Gulf of California are intermediate between O. tenuirostris and C. granosus. They have a rostrum intermdiate in length between the two, not fissuren, but minutely bifid at the tip. There are two cylindrical spines on the gastrie and cardiac regions, and a smaller more acnte spine on the first abdominal segment. There are a few granules on the branchial and hepatic regions. The eyes are large, exreeding the postocular tooth. The carapace is proportionally wider at the hepatie regions than in $C$. temuirostris.

Mensurements．－Length（of male）， 6.5 ：width at buanchial regions， 4.5 ； width at hepatic regions， 3.6 mm ．

Locality．－Lat． $29030^{\prime}$ N．，long． $112040^{\prime} \mathrm{W} ., 45$ fathoms；Lient． Comdr．H．E．Nichols，T．S．N．；$\because$ ：males， 2 immatme females（18104）．

## BATRACHONOTUS FRAGOSUS，Ntimpson．

Butrechonotus fragosus，Stimpon，Bull．Mus．Comp．Zool．，ir，1．122，1870．－A． Mhんe－Eimwanns，op，cil．，1． $180,1 \times 79$.
Stimpson＇s description was made from a single specimen．The basal joint proves to have a terminal spine．The four protuberances of the carapace and also the first abdominal segment are each terminated by a spine in the males，and there are two large tubereles just above the posterior margin．In the females，of which there are two of smatler size than the males，but bearing eggs，the cardiac prominence is con－ spicnously rombed，gramons，withont a spine；the first ambulatory leg is but very little longer than the serond and about one and a half times the length of the carapace，while in the male it is more than twice as long as the carapace．

Mensurements．－Length（of male），7．s；wilth，7．Length（of female）， 5.3 ；width， 4.2 mm ．

This species was collected by tine Albutross at two stations in the Gulf of Mexico，as follows：

| （＇at．No． | Station． | Lat． N ． | Long．W゙． | Fathoms． | Nature of buttom． | 1）ate． |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 2.11 | $\bigcirc$ ，＂ |  |  | 1885 |
| 18105 | 2：370 | 291815 | 853200 | 25 | crs．gy．S．hrk．sh． | Feh． 7 |
| 18106 | 2405 | 284500 | 850200 | 30 | gy．S．lirk．Co． | Mar． 15 |

BATRACHONOTLS BRASILIENSIS，new spectes．
This species is unfortunately represented by a single female specimen with only three ambulatory legs present and those detarhed．The spec－ imen resembles much the female of 1 P．fragosus；the depressions of the carapace are more shallow；the raised portions are covered with gran－ ules，but are withont spines．The postocnlan spine is very small，as in B．frugosus，and the hepatic region projects well beyond it，and has an ache marginal tuberele．The rostral teeth are short and romuded，not extending beyoml the antemmar fossir，and separated by a rombled simus as wide as each lobe．The inferior surface of the carapace and the ablomen are set with tubercles．The three ambulatory legs are very nearly the same length，less than one and a half times the length of the canapace；dactyli long and slender，as in the preceding species．

Mensurements．－Length， 7 mm．；width， 6.
Locality．－Dredged off Rio Janeiro loy Mr．Richard Rathbun during the llartt explorations in 1875－7 7 ； 1 female with eggs．

## BATRACHONOTUS NICHOLSI, new species.

Female: Regions of carapace deeply marked, elevated portions with coarse tubercles mequal in size; a tuberele on the smmmit of each branchial region is larger than all others, resembling a short, stout spine. The depressions of the carapace are smooth. The short rostral teeth are slightly longer than in the preceding species and the interspace equals the tooth in width. Postorbital tooth shorter than the ocular peduncle, as in the genus. Hepatic region adranced, subreetangular, the anterior margin almost at right angles to the median line. On the margin there is a tuberele at the hepatic angle, one on the pterygostomian region and two or three on the hranchial region. Ridges of the basal antennal segment tuberculous, the terminal spine blnnt, eurved, and more produced than in other species, in this respect approaching the gems Euprognatha. Inferior surface tuberculous. Chelipeds tuberenlous, the tubercles becoming spiniform on the inner margin of the merns. The first ambulatory leg (the only one attached) is a little more than one and a half times the length of the carapace; the dactylus is long, nearly equaling the propodus.

Mersurements.-Length, 5.3 mm . ; width, 4.4.
This species is represented by two small dried specimens, females, from the Gulf of California, lat. $29^{\circ} 30^{\prime} \mathrm{N}$., long. $112^{\circ} 40^{\prime} \mathrm{W} ., 4.5$ fathoms, collected by Lient. Commander H. E. Nichols, U. S. Navy. (18107).

## EUPROGNATHA RASTELLIFERA, Stimpson.

Euproguatha rastellifera, Stimpson, Bull. Mus. Comp. Zonl., if, p. 123, 1870.-A. MilneEdWards, op. cit., p. 183, pl. xxxil, fig. 2, 1879.-Smith, Proc. I'. S. Nat. Mיs., III, 1. 415, 1881, and vi, p. 9, 1883; Rept. U. S. Fish Comr. for 1882, 1. 347, M. I, figs. 3, 3:1, 1884 ; op. cit. for 1885, p. 621, 1887.
Collected by the Albatross at the following stations bot hefore recorded:

| Cat. No. | Stalion. | Lat. N. |  | Bottom. |  |  | Hate. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Fiathoms. | 'Temp. | Materials. |  |
| 7794 | 2152 | $\begin{aligned} & 2 \frac{1}{2} \text { miles } \mathrm{N} I \mathrm{l} \\ & \text { Light. } \end{aligned}$ | .ot Havana | 387 | $\begin{aligned} & F \\ & 49 \end{aligned}$ | ('0) | $\begin{aligned} & 1884 . \\ & \text { Аpr. } 30 \\ & 1885 . \end{aligned}$ |
| 15153 | $\because 420$ | $37^{\circ} 03^{\prime} 20^{\prime \prime}$ | $74^{\circ} 31^{\prime} 40^{\prime \prime}$ | 104 | 47.7 | lok. S. M. G | Apr. 5 |
| 15154 | $\because 421$ | 370700 | $74 \quad 3430$. | 64 |  | fue.gy.s P | Jıme 3 |
| 10092 | 2422 | $\begin{array}{lll}37 & 08 & 30 \\ 37 & 10 & 15\end{array}$ | 7t $\quad 33 \times 30$ | 85 | 52.5 | crs. gy s. bk.sp. brk. ilı | June 3 |
| 15155 | 2423 | $\begin{array}{llll}37 & 10 & 15\end{array}$ | $74 \quad 3200$ | 143 |  | gn, M. fue.S . . . . . . . . . . | $\begin{gathered} \text { June } \\ 1886 . \end{gathered}$ |
| 18110 | $\because 642$ | $25 \quad 20 \quad 30$ | $79 \quad 5 \times 00$ | 217 | 42.6 | gy.s | A Pr. 9 |

EUPRO(iNATHA RASTELLIFERA SPINOSA, new subspecies.
(See Smith, Proc. U. S. Nat. Mus., vi, p. 11, 1883.)
Southern specimens of $E$. rastellifera are characterized by longer and more sleuder spines, noticeably the orbital spines, by the sharper and more prominent tubercles of the carapace, and by the unequal slender spines of the merus and carpus of the cheliperls. The spine on the eye is larger and more prominent than in typical $E$. rastellifera, and the
frontal region is more constricted behind the supraorbital spine. The meral joints of the ambulatory legs bear small spines.

Specimens from several stations off Havana aree in the above variations; also a small specimen fom station 2313 , off South Carolina. On the other hand, a male from station 2642 , off Carysfort Reef, is typical in form, the dorsal prominences being reduced to tubercles. In a specimen fromstation 21.2, $2 \frac{1}{2}$ miles northwest of I [avana Light, the orbital spines are broad and triangular, as in typical E. rastellifere, but the remaining spines are long and slender, and the legs are spinons.

Heasurements.-Length (ol male), $9 \mathrm{mm}$. ; width, $6 . \mathrm{S}$; length of cheliped, about 14.5; of first ambulatory leg about 22. Length (of second male), 9.7; width, 7.6 ; length of cheliped abont 16.2; length of secoml ambulatory leg about 19 ; third, 17 ; fomoth, 1.).

Localitios.


ElTROGNATHA GRAClLIPEN, A. Milne-Edwards.

This speries has a deep median furow on the rostrm. The praor: bital teeth are directed upward and forward aud are separated by deep grooves from the rostrmo. The hepatie spine is larger and much more produced than the postorbital spine. The median and branchal spines are eylindrical and more prominent than in $E$. rastellifera. There are fire tubereles in a transverse line on the gastric region, the onter and midde ones being most prominent. There are a spine and several tubereles on the margin of the bramelial region; there is also a short pterygostomian spine, the tip of which is visible from above behind the hepatie sine.

Meresurements.-Length (of male), 8 mm. ; width, 6.2 ; length of chelipen, 10.2: lengit of tirst ambulatory leg, about 24 ; secomel 17: fomth, 12.

## Localities.

Off Hatama, (ruba; U.S. Fish Commissionsteamer Albatross at the following stations:


ARICHNOPSIS FLLIPES，ぶもHpson．



Localilies．
Straits of Florida amd Gulf of Mexico：V．S．Fish Commission steamer Ilbatross，as follows：

| Cat．No． | Station． | Tat． | Tons T | liottom． |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Fathoms． | Telill． | Materials． | bite． |
|  |  | －＇ 1 | －＂ |  |  |  | 1885. |
| 18113 | 2315 | 242600 | 814815 | 37 |  | （ 10 | Jan． 15 |
| 18114 | 2：317 | $2+2545$ | 814645 | 4.5 | 75 | （ ${ }^{\prime} 0$ | dan． 15 |
| 18115 | 2318 | 24.554 | 814600 | 15 | 75 | （＇o | Jan． 15 |
| 18116 | 2370 | 291815 | 853200 | 2.5 |  | （ris．gr．s．brk | Felo． 7 |
| 18117 | 2405 | 284500 | 8.50200 | 30 |  | gy．S．bk．Cu | Mir． 15 |

APOCREMNIS SEPTEMSPINOSUS，L．Milue－E゙dwards．
Apocremuиs septemspinosus，A．Mine－Edwards，op．cit．，p．185，pl．גxiv，fig．it， 1879.
in the female the fingers are in contact thronghont their length．The abdomen las a prominent median carina；the lateral portion is irregu－ larly dotted with round pits，some of which tonch each other；the ter－ minal portion is tuberenlons．

## Localitics．

Gulf of Mexico；1．S．Fish Commission steamer Albatross，as follows：

| Cat．Nı． | Station． | Lat．N． | Long．Wr | Fathoms． | Nature of bottom． | Date． |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | －，＂ | $\bigcirc 1$. |  |  | 188．）． |
| 15165 | 2372 | 291530 | 85.2930 | 27 | Gr | Felb． 7 |
| 15164 | 2373 | 291400 | 852915 | 2.5 | C 0 | Feb． 7 |
| 18118 | 2405 | 284500 | 850200 | 30 | gy．S．brk．（＇o | Mar． 15 |

INACHOLDES INTERMEDIC＇S，new species．
Carapace entirely smooth above，punctate，regions well marked，car－ diae，luanchial，and gastric regions protulerant．Rostrum tipped with a spine，somewhat longer than in $I$ ．obtusus；base triangular，thick，with two ridges from which the sides are inclined downwand，much as in $I$ ． obtusus．The postorbital tooth is very small．There is a tubercle on the margin of the hepatic region，and one also on the pterygostomian and the subbranchial region．Surface of ablomen of female smooth， punctate，with a median carina．Basal antemal joint marmed except for a blunt tonth at the antero－external angle．Merus of maxillipeds deeply notched at the inner angle；imer lobe triangular，obtnse．Cheli－ pels in the female a little longer than the carapace．Merns somewhat angled，with a shallow tooth below near the carpal end．Manns swollen，unarmed．Fingers as long as palm，widely gaping．The first ambulatory leg is missing；the remaning legs decrease regularly in length；dactyli almost straight．

Measurments.-Length of carapace, 5.8 mm ; width, 4.2 ; approximate length of chelipet, 6.5; of seeond ambulatory, 10.7; third, 9.5; fourtlo s.

Locality.-Dredged off Rio Janeiro by Mr. Richard Rathbm in the Hartt explorations of 1575-'T7.

This species resembles $I$. obtusus and $I$. leris in its thick rostrum, but it, differs from all described species in its smooth dorsal surface, even the cardiac region being withont a tuberele.

## ANANDMLS LATUS, new species.

Carapace almost as broad as long, elevated on the median line, the posterior half semicirenar in ontline, the anterion half broadly triangular. Surface covered with tubercles mequal in size. There are five modian spines; two gastric, the posterior the larger, one large on the carliak $\quad$ egion, one very small and pointing backward on the intestinal region, and one long armminate spine directed backward at the distal end of the first abdominal segment. The anterior gastric median spine is one of a transverse row of five. In front of the extreme spines of this row are two longer and sharper. On the branchial region there are three small sjines forming a triangle. There are three antero-lateral spines, one on the hepatic region and two on the bramehial region above the base of the cheliped. The rostrum is short, sharp, triangular, and upturned. The supraorbital spines are prominent, separated by a deep depression. The postorbital spines are long, exreeding the eye in large specimens, much less conspicuons in small specimens. The basal antemal segment is long and narow, teminating in aspine, and with a stontspine in front of the eye pointing downward and forwand. The flagellum is short, its second joint not attaining the end of the rostrum. The pterygostomian region has a row of spines and spimes which is contimed to the antemal segment and inclurles a long spine at the angle of the bucal cavity. The merns of the maxillipeds is strongly cordiform as in A. fuga, Sternum and abdomen tuberenlons. Abdomen of female with median tubereles on the third amd fourth segments.

The chelipeds in the male are a little more than twice the length of the carapace; ischimm, merus, and carpus tuberenlons; merus cylindrical; proporlus swollen, palm shorter than the pollex, with fine seattered tubereses. Digits slender, curved inward, gaping at hase only, their the regular teeth in contact. In the female the chelipeds are a little longer than the earapace, are moln smaller than in the male, and the fingors tonch throughont their length. Ambulatory legs all very long, slender, cylindrical, amed except the dactyli with mumerons small appressed spines; propodi and dateyli with a donble fringe of hair.
lomg imlividnals are narower, with proportionally longer dorsal spines and rostrom and shorter postorbital spines.

Measurements.-Length (of large male), 25.5 mm ; brearth, $\quad$ - 4 length of cheliped, 58 ; leugth of first ambulatory les, 106 ; length (of young male), 11 ; breadth, 8 .

## Localitirs.

Off South Carolina to the Gnlf of Mexioo and Caribbena sea, as follows:

| Ciat. No. | Station. | Lat. N. | Long. W. | Bottom. |  |  | bate. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Fithoms. | Temp. | Materials. |  |
|  |  | ' ${ }^{\prime \prime}$ | - ${ }^{\text {c }}$ |  | ${ }^{\circ} \mathrm{F}$. |  | 1884. |
| 6904 | (212] | $10: 3740$ | 614240 | 31 | 17 | dk. slate.col. M | Fels. 3 |
| 6904 | 12102 | I0 3700 | $61+29$ | 34 | 73 | dki. shate-col. MI . | $\begin{gathered} \text { Felb. } \\ 1885 \end{gathered}$ |
| 9437 | 2312 | 32.5400 | 77.5330 | 88 | 57.8 | ers. S. hk. Sp. | Jan. 5 |
| 18120 | 2317 | 212545 | 814645 | 45 | 77 | CO. | Jan. 15 |
| 18121 | 2318 | 242545 | 814600 | 45 | 75 | Co. | Jatu. 15 |
| 9656 | 2378 | 391430 | 880930 | 68 |  | 9. | Fel) 11 |
| 18129 | 2:88 | 29 21 40 | 880100 | 35 |  | \% s. bk. sp | Mar. 4 |
| 18123 | 2404 | 284400 | 8.31600 | 60 |  | gr. | Mar. 15 |
| 18124 | 2405 | $\because 24500$ | S. 02360 | 30 |  | -y. S. lork. Co | Mlar. 15 |
| 18125 | 2406 | $28+600$ | 844900 | 26 |  | crs. S. Co. | Mar. 15 |

This species ean be distingnished from A. fugar by its greater breadth of carapace, shorter rostrum and epistome, and different arrangement of spines.

## EURYPODIUS LAIREILLEI, Guérin.

Eurypodius latreillfi, Guéris, (Mém. du Musénm, xvi, p, 35̄, pl. xiv, 1828); Icon. Crust. R. A., ii, pl. xi, fig. 1, 1829-44.-Miers, Proc, Zool. Soc. London, 1881, p. 64, and symonymy.

Loculity.—Laredo Bay, Straits of Magellan, January 22, 1888; I. S. Fish Commission steamer Alhutross.

## OREGONIA GRACHLIS, Dana.

Oregonia gracilis, Dana, Crust. U. S. Expl. Exped., 1, p. 11/6, pl. hi, tig. 2, 1859.
Oregomia hirta, DaNa, op. cit., p. 107, pl. m, fig. 3.
Oregonia longimena, Bate, in Lord's Nat. in Brit. Col., if, p. 267, 1866.
This species is one of the most, abmolant of the North Pacific brachyurans. It was collected by the Albutross at 84 stations, from Bristol Bay, Bering Sea, to Oregon, and in depths ranging from 5 to 135 fathoms; and by Mr. Willian II. Dall and others as follows:

Lornlitios.
Maska; Dall rollection:

| Cat. No. | Localiby | Fathoms. | Nature of bothonl. |
| :---: | :---: | :---: | :---: |
| 1470.5 | Anehorage Cape Etolin, Numivak 1sland | 8 | 81 |
| 14217 | Kyaka larbor. | 7-14 | 11. |
| 17710 | Bray of lslands, Adakh....................... | $\stackrel{9}{9}-16$ | 11.s. |
| 14770 |  | $10-16$ 8.20 |  |
| 912496 | Berkoftisy lay. | 15-25 | sli. G |
| 14713 | Port iavasheti |  |  |
| 17703 | Otr limad lstand, Coal Harlor, I'nga | 8-9 | s.st. |
| 14769 | Popmilstrait |  |  |
| -1470 | Sambom larbor, Nagai ......... - . . . . . . . | low water. |  |
| 147179 | Anchorape lig Koninshi lslan d. Shumagins. | 630 | s. |
| 14708 131382 | Pord Mëler Srmidi Islanda |  |  |
| 13138 | Chanidi Islands (cove, Kaliok | 12-28 | $\begin{aligned} & \text { M. } \\ & \text { Mi.s. } \end{aligned}$ |
| 12501 | Chaiatka Cove Kadiak | 15-20 | ${ }^{\text {G }}$ |
| 12195 | Cliniolk Tays, Kadiak |  |  |
| 14711 | Kachelmak lay, Cook's Inlet. | 29-6i0 | sdy. M. |
| 14704 | Powt Etchea | 5-18 |  |
| 14768 | West sidu of Middleton Island | 10-1:3 | G. |
| 14712 | Lituya bay............... | 9 |  |
| 19.517 | Simmite Cove, Port Anhorp | 15 | (i. 11. |
| 14714 | silk: |  |  |

Baring Island; L. Stejneger; fomig specinens (13B10) ; N. (irrbnitski (1476).
Menzies Bay, Discovery l'assage, IB, (., 6 fathoms, soft bottom; lient. Comdr.

l'ort Orehawl, Pnget Somm: O. B. Johmsom (14971).

## ANAMATHIA (RASSA, (A. Milne-Ldwards). <br> Plate I, fig. 4.


Amuthia agassi=ii, Sutis, Bull. Mns. Comp. Zool., X. p. 1, pl. נ, tigs. 2. 3, 1882; I'roc. U.S. Nat. Mns.. V1, p. 3, 1R83: Rept. U. S. Fish Commissioner for 18が, 1. $316,1881$.
 Fish Commissioncr for 18sio, p. 624, 1887.
Sevaral large specimens wero dredged at station 2660\%. A female gives the following measurements in millimeters: Length of carapace, including rostral spines, 77 ; length of rampace, excluding rostral spines, 70 ; width, incholing spines, 5!) ; width, excluding spines, 57: length of cheliped, 107 ; length of first ambulatory leg, 199; second, 164 ; thind, 140 ; fomrth, $1: 32$.

## Lncalities.

Off the mast of Solth Carolina and Florida beg the IT. S. Fish Commission stamer Albutross as fothows:


ANAMATHIL HVSTLIL, (Stimpson).
Imathia hystrix, Stimpson, Bull. Mus. Comp. Kool., it, p. 121, 1870.-A. MunfeEDWARIS, op. cit., pp. 134, 200, pl. xxvif, fig. 1, 1879 ; lull. Mus. Comp. \%ool., vili, p. 2, 1880.
Anamathia hystrix, Smitn, Rept. U. S. Fish Commr. for 1885, p. 626 (1887,
Briefly characterized by Stimpson as bearing a close resemblance to A. rissoana, but differing in having fonr instead of three spines on the gastric region. The specimen at hand is the same species as that figured by A. Milne-Edwards, but ditiers in having much longer spines and in the greater divergence of the rostral horns.

Locality.-Two and a half miles northwest of Havana light, :387 fathoms, coral, temperature $49^{\nu}$, April 30,1884 , station 2152 , steamer Albatross; one immature female ( 6940 ).

Measnrements.-Length, measured from between rostral horns, 16 mm.; length of horns, 17.5 ; width withont spines, 12; width with spines, 27 : distance between tips of horns, 13 .

ANAMATILA UMBONATA, (ぶtimpson).
Plate I, Figs. 1-3.
Seyra umbonata, Stimpson, Bull. Mus. Comp. Zool., 11, p. 115, 1870.- 1. MilneEinwalins, Crust. dı Mexique, p. 87, 1875, pl. xxxi A, fig. 5, 1880; 13ull. Mus. ('omp). Zool., vin, p. 2, 1880.
Scyramuthia nmbomuta, A. Maxe-Edwarbs, Comptes hendus, xct, p. $350,1880$. (See Sars, Den Norske Nordhavs-lipedition, xiv, Crustacea, 1, p. 7, 1885; also Shith, Rept. U. S. Fish Commm. for 188: p, 625, 1887).
At Station 2415, off Georgia, were found four specimens of Stimpson's Scyra umbonata. The protuberances of the carapare are as described by him. The rostrm is composed of two slender divergent horns. The basal antemal joint is eoncave beneath, rather narrow and marmed, except for the blunt tooth at the antero-external angle. The surface is covered with a deuse coat of broad setre similar to those deseribed by Sars as oceurring on Scyramathia carpenteri. The legs are bordered by longer chb-shaped setie, while the gastric region and the margins of the rostrmu and branchial regions are furnished with long slemder hairs curved at the tips. Threre is a prominent preorbital spine and a postorbital lobe.

The four specimens in the han are alike in all essential partientars. Three are females, two of them bearing eggs, and the formbth is sath male. In the latter the rostral horus are more divergent. The largest female has a total length of 29 mm .

Three other specimens oceur at station 2668, off Fernandina, Florida. The ambulatory legs of all are longer and more cylindrical than in the individuals from station 2415. One (which I will call A) is a male, 26.5 mm . long. This also is a typical mmbonata as regards the orbits and ornamentation of the carapace, and is apparently mature, the cheliperls being elongate, about $1 \frac{1}{2}$ times the length of the carapace, the propedus much longer than the merns and strong, its margins thin and subparallel; fingers gaping for their basal half, dactylus with a basal tooth. Ambulatory legs with the chbshaped set:e reduced in sizc.

The largest specimen (C) fiom this station is an ovigerons female, 31 mm. long. The carapace is much swollen and smoother than in those above described. There are but three flat-topped protuberances, the cardiae and anterior branchial; their flattened tops are smaller than theirbases. The other prominences are simply tubereles, the gastric one being elongate and smoothly rounded. The marginal spines are tapering, and not broad and flat as in the specimens fiom station 2415, the hepatic spine not erect but directed ontward and slightly forward and npward, and the banchal spine directed not forward hot ontward and slightly upward. The ambulatory legs are conspienonsly clothed with long slender bristles among the short seta.

These characters are sufficient to make this specimen specifically distinct from those deseribed above, were it mot that the third sperimen (B) from this dredge hanl is intermediate in character. It is a male, 28 mm . long, but with the ehelipeds not strongly developed. The protuberances of the dorsal surface are as in (, excepting that the flattened tops of the three prominences overhang their bases. The marginal spines are as in A. The ambulatory legs are as in C, and the earapace has more long find bristles than in any other specimens.

In ( $(\mathrm{fig} .3)$ the orbits are widely open, more so than in $A$. arassa (fig. 4); there is in fact no upper surface to the orbit. The onter surface of the postorbital lobe is flat, and it is directed forward or in a line almost parallel to the median line. The praorbital spine is directed well ontward; its posterior or onter margin is concave, directed strongly inward from the tip and then slightly outward. In A (fig. 1) the onter margin of the postorbital lobe is inelined strongly inward; the onter margin of the preorbital spine is directed slighty inwad from the tip and is convex posteriorly. This disposition of the orbital spines necessarily makes the opening of the orbit narower as seen from abore, especially at the posterior end where the narrow sims gives it am apparance similar to that seen in A. curpenteri, which Prof. Sars considered to be allied to the genus Hyastenus (see fig. $5, I I$. lonsipes). In the orbits of 13 (fig. 2 ) the intermerliate character is again seen, the postorbital lobes resembling those of $\Lambda$, the pratorbital spines those of C .
A. carpenteri (Norman) is more pyriform than A. umbonutu, narower anteriorly, and the preorbital spine is reduced to a lobnle.

Heceurements in millimeters.

| Sirx <br> Slation | Cot | ¢ ( -668 | $\stackrel{f}{2+15}$ |
| :---: | :---: | :---: | :---: |
| Total longth of carapate | 25.6 | 31 | 29 |
| Length of rostral spine, insidon | 7.3 | 7 | 6. x |
| Total witth of caraluace. | 19 | 90 | $2 \%$ |
| Wialth withont spines. | 15 | 17.5 | 17.5 |
| Lengeth of cheliped. | +1. 5 | 30 | 96 |
| lenneth of dirst ambulatory leg. | 42 | $4!$ | 38 |
| Length of serond ambulatory leg | $3: 3$ | 40 | 31 |
| Lenget of third ambuhatory leg. | 97.5 | 34 | 97 |
| Length of dourth ambulatory leag | $\because 6$ | 32 | 2 i |



## Orbital Variations of Anamathia.

Figs. 1-3. Orhit and rostrum of Amemethie zembonatet $\times 3 \frac{1}{2}$.
Fig. 4. Same of Anamuthia crassa $\times 1 \frac{3}{5}$.
Fig. 5. Same of Hyastemas longipes $\times 13$.
 A, fig. 2, 1880.
The single specimen collected by the Albatross is larger than that figured by A. Milne-Edwards. The carapace is rough with spinules, and covered with soft bristles. The four spines on the gastric region form a transverse diamond; there are two median spines close together on the cardiae region; five spines on the branchial region, three near the inmer margin and two near the onter; one hepatie and one subhepatie spine. On the posterior margin of the carapace is a line of twenty-five small spines terminating above the first amblatory leg; of this row the median spine and two near the middle are larger than the others. On the margin of the branchial region there is a line of four spines extending forward from above the first ambulatory leg. On the pterygostomian region there is a cluster of four spines. The rostral spines are longer, more slender, and more divergent than in $\Lambda$. Milne-Edwards's figure. The prarbital spine is acuminate; the postorbital is long, projecting laterally much beyond the eye. The eyes are large and flattened almost in a horizontal direction. There is a large suborbital spine, and a spine at the angle of the buccal cavity. The basal antemal segment bears a terminal and one lateral spine; the second joint of the flagellum reaches half way to the end of the rostral spines, while the remaining portion of the flagellum exceeds the rostrum by half its length. In the abdomen of the male the first segment has three spinules transversely arranged ; the second hastwo median and one lateral; the third and fouth have a median tubercle. Sternum with four spinules in front of the abdomen.
The chelipeds are nearly twice the length of the carapace; ischimm, merns, and carpus spiny. Manus broad; upper margin with a small spine near the carpus and at a little distance a minute spinule visible with the glass; lower margin with a tooth near the artienlation. Fingers flattened laterally, broad, toothed on the prehensile elges, acute, narrowly gaping for half their length. Ambulatory legs slender, with scattered bristles, the first nearly three times the length of carapace, the fourth about one half the length of the first. Other legs missing.

Measwrements.-Length, 18 mm ; width, without spines, 13 ; length of rostral horns, 3.2; length of cheliped 33.5; length of first ambulatory leg, $5^{2}$; length of fourth, to articulation of dactylus, 21 .

Locality.-Little Bahama Bank, lat. 270 2 2 2 N., loug. $78^{\circ} 00^{\prime \prime} 30^{\prime \prime}$ W., 338 fathoms, gray sand, temp. $47.5^{\circ}$, May 2,1886 , station 2655; one male (11400).

I have examined three small specimens from the Blatie collection in the Museum of Comparative Zoölogy and find that they agree with the one above described in the rery slender rostral spines and the relative length of the antemal joints, and also possess spinules on the npper margin of the manus.

## LINロO（iNATHCS 111OMsいNI，（N゙orman）．

Dorynchus thomsoni，Noman，in Thomson，Depths of the Sea，1．17t，ent， 1873.
Lispognathus thomsoni，A．Mhexe－Edwards；（Arch．Miss，Sci，Litt．，」X，1p．16，39， 188：2）．Miets，（hallenger Rept．．Zool．，xvil，p．28，I＇l．v，fig．2（variety），
 （i2 2, ，18NT，and symonymy．
Loculity．—Off（ieorgia，lat． $30^{\circ} 44^{\prime}$ N．，long． $79026^{\prime} \mathrm{W}$ ．， 440 fathoms， coral，coarse sand，shells and foraminifera，temperature $\tan _{5} \mathfrak{k}^{\circ}$ ，A pril 1 ， 18sí，station 2415，U．S．Fish（＇ommission steamer Albutross： 1 male， 1 female（18119）．

These specimens have been compared with a femate from station 2e62，off Martha＇s Vineyard（Smith，loc．cit．）．They are about the same size and apparently the same species．

## HOLOPLITES，new gemms．

（anapace pyriform，covered with sharp spines of mequal length． Rostrum composed of two long，slender，divergent horns．Praeobital spines long．Orbits open，spinoms．Basal antemal segment very nar－ row，spinons．Antero internal angle of the merns of the maxilipeds oblique，not notched for the artienlation of the palpus．Abdomen of female with the fourth，fiftlo，and sixth segments roalesced．Chelipeds and meral joints of ambulatory legs spinons．

This gemis resembles Eehinophex，Miers，in many respects，but does not possess accessory spinules on the rostrim．It differs fiom Nibiliu in the very incomplete orbits，the narrow basal antrmal segment，the number of abdominal segments in the female，as well as in the form of the maxillipeds．

HOLOPLITES ARMATLN，（A．Milne－Edwards）．
 1880．
One specimen（18126），a femate with cogs，from station $\because 150$, two and a half miles northwest of Havana Light． 387 fathoms，coral，tempera－ ture 490.
The spine above the orbit is nearer the postorbital than the pra－ orbital，and is longer than represented in A．Milne－Edwards＇s figure． There is also a subhepatic spine．The rostrmm of the Allations speci－ men is longer proportionally than the one figured and is not divided to its base．The first three segments of the abdumen in the female are rery narrow and have each a median spine，diminishing in length from the first to the thind；the secomd and thid segments have lateral spin－ ules，which are almost impereptible on the third；fourth segment very large and smooth；terminal segment hoadly romber at the extremity． The abdomen has scattered hairs like the rest of the surfare．
Mensurements．－Length，including rostrum，23．3．）mm．；length of ros－ tral spines， 8 ；width，without spines，11；width，inchuding spines， 16.

CHORINUS IHEROS, (Horbst).
Cancer heros, Herist. Natur. Krabben mid Krebse, if, p. 165, pl. xli, tig. 1, Il. xvili, fig. 102, 1796.
Chorimus heros, Leacif (Latreille, Encye., t. 10, 1. 139).-A. Milne-Edwards, op. cit., p. 86, and synonymy.
Localties.—San Domingo, W. M. Gabb, 1575 (4176). Rio Vermelho, Bahia, Brazil, February 6; Riehard Rathbun, Hartt Explorations, 1875-77.

TRICHOPLATUS HUTTONI, (A. Milne-Edwards).
Trichoplatus huttoni, A. Milne-Edwards, (Ann. Sei. Nat. (6), iv, art. 9, 1י1). 1-3, pl. x, 1876), file Zool. Roc., 1877.—Miers, Jour. Linn. Soc. London, xiv, p. 647, 1879, (Erichoplatus).
Hulimus hectori, Miers, Ann. N. H. (4), Xvii, 1. 219, 1876; C'at. Crust. Now Zealand, 1. 4, 1876.
In a male from New Zealand, presented by the Otago University Museum ( 16224 ), the chelipeds are very robust; in another from Bluff Harbor, New Zealand (18127), the right cheliped is short and slender, the left long and robust.

## Subfamily Acanthonvcilina.

ANOMALOTHIR FURCILLATUS, (Stimpson).
Anomalopus furcillatus, Stimpson, Bull. Mus. Comp. Zool., is, p. 125, 1870.- A.
Milne-Edwards, Crust. du Mexique, 1. 188, pl. xxxv, fig. 4, 1879.
Anomalothir furcillatus, Mrers, Jour. Linn. Soc., London, Xiv, p. 648, 1879.

## Loculities.

Collected by the Albutross at the following stations:

| Cat. No. | Station. | Lat. N. | Long. W. | Fathoms. | Nature of Bottom. | Date. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | - 11 | - 1 " |  |  | 1885. |
| 15166 | 2346 | 231039 | 82.2021 | 200 | Co. | Jan. 20 |
| 18127 | 2401 | 283830 | 855230 | 142 | gil. M. brk. Sh | Mar. 14 |
| 18128 | 2601 | 343915 | 753330 | 107 | gy. S. | ()ct. 18 |
| 15156 | 2319-50 | Onl Hava | na, Cula. | $33-279$ | Co. | Jan. 17-20 |

MOCOSOA CREBRIPUNCTATA, (Stimpsou).
Mocosou crebripunctate, Stimpson, Bull, Mus. Comp. Zool., if, 1. 128, 1×70.—A. Mine-Edwards, op. cit., p. 137, 1878.
The large immovable eyes completely fill the eirenlar orbits which are provided with a small, inconspicuons tooth on the outer side. The area above the orbit is thickened and protuberant, but withont a preeocnlar spine. The third, fourth, and fifth segments of the abdomen in the male are coalesced. The chelipeds are stout, elongate; merus cyliudrieal; manus slightly compressed, widening distally; fingers very short and stout, little gaping, dentate. The surface of the erab is everywhere punctate.

Measurements.-Length, 7 ; width, 6.2 mm.
Locality.--Gulf of Mexico, lat. $29^{\circ} 15^{\prime} 30^{\prime \prime}$ N., long. $8.5^{\circ} 29^{\prime} 30^{\prime \prime}$ W., 27 fathoms, gravel, station 2372 , steamer Albutross, Feb. 7, 1885; one male (18129).

Proc. N. M. $94-5$
sphenocarcinns corrosun, A. Milae-Edwahis, op, cit., p. 136, pl. xili, lig. 5, 1878.
One female with eggs, from off Cape Fear, North Carolina, lat. $33^{\circ}$ $20^{\prime}$ N., long. $75^{\circ} 05^{\prime} \mathrm{W} ., 90$ fathoms, gray sand, temperature $65.8^{\circ}$, April 2,1855 (15183).

In this specimen the rostrum is longer than in A. Milne-Edwards's figure and the horns are divergent for their terminal half. The supmorbital margin terminates anteriorly in a romaded lobe more prominent than is indicated in the figure. The protogastric lobes are larger and more broadly joined to the mesogastrie. The middle portion of the cardiac lobe is also deeper than represented in the figure.

SHMOCARCINLS SLMPLEX, (D:口a).
Huenia simplix, Dana, Crust. U. S. Expl. Exped., I, 1. 133, ,l. 6, fig. 3, 1852, male.
Haenia brerirostrata, DANA, op. cit., 1. 134, 11. 6, tig. 4, female. Simocurcimus simplex, Marrs, Ami. Mag. Nat. Hist. (5), iv, p. 6, 187!.
Loculity.-Western Indian Ocean; W. L. Abbott, 1 male (18130).
The rostrum is much longer and narrower than in the example figured by Dana.

## ECHINCECUs, new gemis.

Carapace subpentagonal, very convex in the antero-posterior direction. Rostrmm triangular, hattened horizontally, strongly deflexed. Eyes small, in cirenlar orbits, concealed by the carapace and situated at the indentation formed by the meeting of the antero-lateral and rostral margins. Antenne very small, covered by the rostrum, the basal seg. mentnarow. Maxillipeds with the merns noteled at its antero-internal angle. Abdomen of female with 7 segments. Legs short.

ECHINEECUS PENTAGONLS, now species.
Carapaec almost smooth, convex in both directions, especially so in the antero-posterior directions; posterior margin straight, forming oblique angles with the postero lateral margins, which are directed forward and ontward. Antero-lateral angles rombled. Surface punctate. Thereare a few romul shallow drpressions between the areas, and seven or eight small low tubercles on the cardiac region. The rostrum is nearly as long as its breadth at base, thinedged, obtuse and sliglitly indented at the tip. The eyes are withdrawn into small nearly circular orbits which are bordered below by the small narow basal antennal segment. The flagellum is short, not reaching to the middle of the rostrum and is entirely concealed loy it. The antemnla arenearly longitudinal. Epistome short. The lower surface of the carapace is conspicuonsly punctate. Maxillipeds punctate; inner margin of morus convex, antero-internal angle with a slight moteh. Abdomen of female much longer than wide.

Chelipeds short and stout, punctate; isclium with a low tooth on immer margin; merus trigonal, widening distally, with a stont tooth on each margin near the carpus; carpus with two teeth on inner margin.

When the chelipeds are folded close to the carapace, one carpal tooth is just in front of the antero-lateral angle, the other just behind it. Propodus deep, especially toward the fingers, where the upper margin is produced much above the dactyl. Finger's short, irregularly and feebly toothed along their prehensile edges which are in contact, the tips crossing. Ambnlatory legs marmed, somewhat flattened; meral joints rectangular; propodal joints tapering towards the dactyli which are stont, and hairy beneath, with curved homy tips.

Measurements.-Length of earapace, 1 m mm.; width at antero-lateral angles, 14.3 ; posterior wilth, 8 ; width at orbits, 5.5 ; length of rostrum, 4.8 ; length of cheliped, 14 ; lower margin of propodus, 7 ; greatest depth of propodus, 3.7 ; length of first and second ambulatory legs, 15 ; third, 13.2; fourth, 12.5.

Locality.-Port Lloyd, Bonin lslands; fiom the anal end of the intestinal canal of Echinothrix culcmaria; one adult female (13589).

This species with its smooth broad (arrapace and short legs is andipted for commensalism, and resembles smperficially certain of the Pinnotheride of similar habit.

## EPIALTLS BITUBERCULATIs, Milne-Edwards.

Epialtus bituberculatus, Mhne-Einwalins, Mist. Niat. Crust., 1, p.315, ph. xry, fig. 11, 1834.-A. Miles-Edwards, op. cit., p. 139, pl. Xxvi1, figs. 1, 2, and 3, 1878, and synonymy.
Epialtus dilatutus, A. Mane-EDWarbs, op, cit., P. 140, pl. xxvir, fig. 1.
Represented in the collection by 10 specimens from 9 localities. A larger series would probably show that E.sulcirostris and E. longirostris Stimpson and E. minimus Loekington are variations of the same species.

Sabanilla, United States of Colombia; U. S. Fish Commission; 1 male (18131) of the form shown by A. Milne-Edwards, op, cit., pl. xxvir fig. 3.

Pernambuco (?), Brazil; Richard Rathbun, Hartt Explorations, 1875-77; 1 male, 1 female, also of the brasiliensis form, and the male with the heavy chelipeds figured by Dana.

Bird Key, Florida; U. S. Fish Commission schooner Grompus, April, 8,1859 ; one female with eggs ( $\mathbf{1 5 2 0 4}$ ) of the dilatatus form, the anterior lateral lobes being more romoded than in A. Milne-Edwards's figure, and the rostrum narrower at base and less tapering.

Dry Tortugas, Florida; Dr. Edward Palmer; one immature female (18132) of the dilatatus form, with lobes like the last.

Florida (?); one small make, ( 1446 ) with lobes intermediate between typical bitubcrculatus and dilatutus.

West coast of Florida; Henderson and Simpson; one immature female ( $\mathbf{1 S 1 3 3}$ ), with elongate, emarginate rostrum and rather prominent lateral lobes, the auterior rounded, with its anterior margin sloping backward and outward, the posterior lobe with a prominent tuberele on its anterior margin.

Key West, Florida; 1). S. Jordan, December, 1883; one male (18134), with rostrom similar to the last, and with acute somewhat spiniform lateral lobes.

Panama (?) ; one small female (18135) with eggs, with entire rostrm, and prominent lateral lobes, the anterior being rounded and its anterior margin sloping backward and ontward, the posterior lobe smaller and acute.

Southern Ualifornia; W. Il. Dall; one male (1s136); this specimen shows a greater divergence from typical forms than any of those hitherto deseribed; the rostrmm is broad amd ilat, widening toward the extremity which is broadly emarginate; the preorbital lobes are small but acute ; the hepatic lobes are enormonsly developed, their anterior margins directed forward, ontwad and mpard, their extremities being more advanced than the eyes. The postero-lateral projections are stont, acute tecth. The palms of the chelipeds are very long and terminate in a strong prominence behind the dactyl. Length 11.3 mm ., width 9 mm .

## EPIALTUA PRODUCTVS, kandall.

Épiallus produches, Randall, Jour. Acad. Nat. Sci. Philit., Vim, p. 110, $1 \times 39 .-$ Gabbes, l'roc. Amer. Assoc. Adv. Sci., 111, p. 173, 1850.-W.1Na, op. cil., 1, 1. 133,
 Jomu. Nat. Hist., Vi, p. 157, 1857.-Ricmalid Ristmbun, Fisheries Industries of U.S., Sec. 1, 1. 778, pl. 268. 1884.

## Loculitics.

Alaska:
Kyska llarbor, ! to 12 fathoms, samdy rand ; W. II. 1)all (14797).
British Columbia:
Barelay Sound; U. S. Fish Commission (15521).
Beáver llarbor; U.S. Fish Commission (15513).
Victoria; C. F. Newcombe (15796).
Washington:
Straits of Finea; D.S Jordan (3061).
Port Ludlow ; W. II. Dall (14796).
Port Orchard; O. B. Johnson (14974) ; IT. S. Fish Conmission (15518).

## Califormia:

Tomales Bay (148;3).
Sian Francisco; D. S. Jordan (3095).
Sin Franciseo (?); U.S. Exploring Expedition (23titi).
Point Loma; U.S. Fish ('ommission (15) 2ey).
Monterey; A.S. Taylor (20.54) ; D. s. Jordan (31291) ; H. IHemphill (2989, 3292) .
Monterey Bay; U.S. Fish Commission (15520).
Santa lsarbara; Shoemaker (2316) ; D. S. Jordan (3048).
San Pedro; D.S. Jordan (3088).
Catalina Harbor, beach; W. H. Dall (14793).
 (146.52) ; Il. Hemphill (18137).
sonthru California; W. II. Dall (14794).
West coast North America; North Pacilic Railroad survey (2139).

EPIALTUS (ANTILIBINLA) DENTATUS, (Milue-Edwards).
Epialtus dentatus, Mune-EnWards, Hist. Nat. Crust. 1, p. 345, 1834.-Berl, Trans. Zool. Soe. London, II, p. 62, 1835.
Epialtus (Antilibinia) dcutatus, Mers, Jomr. Lim. Soc. Louton, xiv, p. 650, 1879.
Loculities.
Panama (?) ; J. M. Now; 1 female (2402).
West Coast of Sonth America; Dr. II. E. Ames, U. S. N. ; 1 female (18138). Callao, Perm; U. S. Exploring Expedition; 1 female (236:).
Valparaiso, Chili; I. S. Exploring Expedition; male and female (2367).
The specimens collected by the United States Exploring Expedition, although labeled by Dana, were omitted from his report.

EPIALTUS (ANTILIBINIA) MARGINATUS, (Bell)
Epialtus marginatus, Bels, op. cit., p. 62, pl. xi, fig. 4 (\%), pl. xili (8).-A. Milne-Edwards, olf. cil., p. 138, 1878.
Epialtus (Antilibinial margimatus, Mers, loc. cit.
Loenlity.-Valparaiso: U.S. Exploring Expedition; male and female (2372). Labeled but not recorder by Dana.

EPLALTUS (ANTILIBINTA) NUTTALLII, (Randall).
Epialtus muttallii, Randali., Jour. Acal. Nat. Sci. llhila., vint, 1. 109, pl. 1It, 1839.

## Localities.

Santa Barbara, Cal. ; D. S. Jorlam, 1880 (3108).
San Diego, Cal.; II. Hemphill; 7 yonng females (18139).
Sonthern California; W. II. Dall; 1 yommg female (14798).
PUGETTIA GRACILIS, Dans.
Pugctiag gracilis, Dana, op. cit., 1, p. 117, pl.4, fig. 3.-Stimpson, op. cit., p. 456. Lociengton, Proc. Cal. Acad. Sci., Vif, p. 76, 1876.--Miers, Jour. Linn. Soc. London, XIV, p. 650, 1879; Challenycr Rept., Zool., XViI, p. 40, 1886.
Pugettia lordii, Spence Bate, in Lord's Nat. in Brit. Col., I, p. 265, 1866.
P'ugcttia quadridens var, gracilis, Ortmann, Zaol. Jahrb., vir, 1, p. 43, 1893.
In many specimens the wing-like lateral expansion is strongly mpturned, and there are four tubereles on each branchial region, one in line with the cardiac tubercle, one further back but nearer the median line, while the other two are further forward on the branchial region. The upper surface and margins of the rostral horns and the imner margin of the preorbital teeth are marked with lines of curled setre. The earpus of the cheliped, besides the two carine above, has a strong carina on the inner margin, and is irregularly ridged on the outer surface. In large males, the hands are very wide, compressed, with the upper carina very thin and prominent; fingers gaping at hase, with a short, stout tooth on the dactyl.

The color of dred specimens recently received from Dr. Neweombe is red and green above, and red beneath.

Mensurements.-Length of largest specimen, 53 mm ; branchial width, inchuling spines, 40 ; length of cheliped, about 86 ; width of hand, 18.

There is nothing in the description or tigure of $P$. Iordii Spence Bate to indicate that it differs from $P$ ? yracilis. It is said to range sonthward to San Franciseo.

This species differs from $P^{\prime}$. quadridens in its greater proportionate width at the hepatic regions. In l'. quudridens the carapace is obvionsly triangular, being much wider posteriorly than anteriorly, while in $I^{\prime}$. yracilis the carapace is very little wider at the branchial regions than at the hepatic. The anterion lateral expansion has its posterior lobe produced much further forward than in $P$. quedridens; its outer or posterior margin is rery convex, while in $P^{\prime}$. qualridens it is concave except near the end of the lobe. The prombital lobes are wider and the orbital sinus narrower in $P$. gracilis than in $P$. quadridens. In $P$. gracilis the four gastric tubereles (the anterior one is obsolete in old specimens) form a Latin cross ; in $P$. quadridens they form a rectangle. The ambulatory legs are more slender in $I$. quadridens.

## Localities.

Alaska; William II. Dall:
Chichagofi Harbor, Atto, $\bar{\prime}$ to 7 fath., gravill, siml (14756).
Kyska llarbor, in pass, 10 fith. (147:0!).
Nazan Bay, Atka, low water (147:it).
Off Imagna Pimacle, Captain's Ban, Thalaska, 8 to 20 fath. (12538).
Aumknak Islanl, shores (13131).
Belkolisky lay, 15 to 25 fath. (1475) .
1'opoff Strait, Shomagins, 6 fath. (117isis).
Chidikoff Istand, leach ( 1.5375 ).
Middleton Island, west side, 10 to 12 fath., gravel, stomes (14758).
Port Mulgrave, lakutat Bay, foto 10 lath. ( $1176: 3$ ).
Lituya Bay, fo to 9 fath. (1176if).
Alaska; other collectors:
Unalanka; K. Applegate (120:0).

Sitka; Commamder L. A. Beardshe, ľ. A. N. (3171); F. Bischotf (2178).
Wad Cove, Revilla (iigedo Jsland; Jr. T. H. Streets, U. S. N. (14761).
Alert lay, Cormorant Island, beach; Ir. W. II. Jones, U. S. N. (ixis).
British Colmubia:
Tledoo Village, near Susk, northwest coast of (iraham Island, Quen Charloth group; James (i. Swan (6611).
Barelay Sonnd; U. S. Fish ('ommission (Iantu).
Vietoris; 1). C. I'. Newrombe (157!! ) .
W:ashington:
Stratits of Fuca (3400) ; 1). S. Jordan (3075).
Neah Bay; J. (k. Swan (2396, 5761).
Port Angeles; U. S. Fish Commission (181/0).
Port 'ownsemd; I. S. Fish Commission (16033).

['uget Somud; 1). S. Jordan (30:17).
Forl Grehard; (I. B. Johnson (14967).

## PUGETTIA RICHII, Jau:

Pugetfiarichii, Dana, op. rit., I, p. 11R, 1l. 1, fig. 4.—Sthmpans, op. cit., p. 457.Lockington, lof. cit.-Miers, loc. cit.
This species is not larger than $I$. gracilis, and in adnlt sperimens the hands and fingers do not differ in the two species. P. richii is, howerer, readily distingnished by the bilobate lateral expansion, the posterior lobe of which is slender and almost transverse, and the anterior lobe more transverse than in $P^{\prime}$. gracilis. The merus has a few irregular teeth above instead of the prominent carina of $I$ '. Iracilis. Carpus with a single carina above and one on the inner margin, and between them but a slight trace of the diagonal ridge so prominent in $P$. gracilis. Ambulatory legs more slender and cylindrieal than in $P$. gracilis.

Localities.


PIGGETTIA QUADRIDENS, ( de II a a u).
Pisa (Mrmothius) quadridens, De llame, Fama Japon., Crust., p.97, pl. xxive, fig. 2 , male, and pl. C, 18.0 .
 pl. G.
Menothins qualridens, Amans and Winte, Voy. Samarang, ('rnst., p 20, 18.18.
Mcnathius incisus, Aibans and White, lor. cit.
P'uetlia quudridems, Stimison, Proc. Acad. Nat. Sci. l'hila., IX, p. 219, 18.7.Miers, Proc. Zool. Soc. London, p. 23, 1879 ; Challenger Rept., Zool., xvir, p. 40, 1886.

Pugettia iucisa, Stmpson, loc. cit.-Miers, lof. cit.
After careful study of a large series of specimens of this genus from Japan I find it necessary to mite De Haan's two species. There are specimens in the collection as distinct as those figured by De IIaan. In a lot of fome examples from Yokohama Bay three represent the typical $l$ '. incisa, while one has the hepatic expansion more projecting and more concave on the margin. Rev. IH. Loomis has recently presented to the Musemm 60 dried specimens from Japan, exact locality not given. Of these about 25 have the strongly produced lateral expansion with a deep sinus separating the postorbital tooth from the sharp posterior tooth. About 10 specimens have the narrower carapace, almost truncate lateral expansion with a rounded posterior angle. The remainder of the specimens are intermediate in width, with the hepatie margin more or less concave and its posterior angle subacute. The prominence of the median tubereles varies with the individual.

In male specimens of both varieties 2.5 mm . long the chelipeds are, identical; the palms are slightly constricted hehind the fingers, which are evenly dentate and in contact for nearly their whole length. There
are no larger examples of the $P$. incisus type in the collection, but specimens of the $P$. quadridens type and of the intermediate grade, about 35 mm. long, have chelipeds proportionally much larger, hands of nearly equal width throughont, fingers ilentate for nearly their entire length, in contact for their terminal half, gaping at base, and without the two prominent isolated teeth at the hase of the dactyl represented in De Haan's figure of $I$ '. quadridens.

Aside from the characters on which De Haan's two species were foumded-the shape of the earapace and the development of the cheli-peds-there seem to be no sperifie differences.

Lecalities.
Yokohama Bay, Japan, f fathoms, kelp (13918).
Japan; II. A. Ward (18141); JI. Lommis (181.12); Dr. F. C. Jite, U. A. S. I'alos (13720, 13726).
Fusan, (orea; I'. L. Jouy (12t00).

## PUGETTIA FOLIATA, (Stimpson).

Mimulus foliatus, stmpson, Amm. Lye. Nat. Hist. N. Y., vif, p. 200, 1860.
There seems to be no good reason for placing this in agems distinct from Pugettia. The antenne have the basal joint as in that geuns and the flagellum flattened and exposed at the sides of the rostrum. The lateral expansion is bilobate, but the carapace is wider than in other species of Pugettic. The breadth of the carapace does not always exceed the length, as, for instance, in the specimen from Barelay Sound, Where the dimensions are: Length, 12.5 mm . ; width, 12 mm . The chelipeds present nothing distinctive; the mans is very broad and las thin npper and lower margins. The maxillipeds, abdomen, stermm, and ambulatory legs are almost exactly as in $P$. gracilis.

## Localities.

Ofl Imagna Pimacle, Captain's Bay, Umalaska, ito to fathoms; WV. H. Hall (11894).

Barclay Sonmd, B. C.; U. S. Fish Commission (150.f8). Monterey, Cal.; II. Hemphill (3291).

ACANTHONYX PETIVERII, Milne-Edwards.
Acouthonyx petircrii, Mane-Enwards; Mist. Nat. Crisi., i, p. 343, 1834.—A. Mine-EDWARDs, op, cit., p. 143, pl. xxvif, fig. 7, and synonymy.

Localifies.
Mar Crande, Bay of Bahia, lirazil, Rirlaril Rathbun, Martt explorations 1875-77; one limale.
l'ernambuco (?), same collertor; mate and female.

## Subfamily Microrifynchina.

## NEORHYNCIIUS DEPRESSUS, (Bell).

> Microrhynchus depressus, Bele, Trans. Zool. Soc. Lond., if, p. 42, pl. 8, fig. 2, 1835.
> Neorhynehus depressus, A. Mine-Einwards, op. cit., p. 187, 1879.

Hitherto only the female of this speeies has heen known. The abdomen of the male has a long, acnte, horizontal spine on the first segment as in the female; the onter margins of the fifth and following segments are nearly parallel; terminal segment rounded; sixth and seventh anchylosed. The abdomen figured by Bell is that of an immature female; in mature females the fifth or anehylosed segment is much wider than long, the distal margin slightly concave. The chelipeds of the male are weak as in the female. Of the ambulatory legs the second pair is the longest and the first the shortest, fringed with long hairs; sceond pair less hairy, third and fourth pairs slightly hairy. Last pair shorter than the third. The basal antemal joint lias the inner margin irregularly dentate, the antero-internal tooth blunt, not so far advanced as the antero-external, which is slightly incurved, romeded.

Meusurements.-Length of rarapace (of largest specimen, a female), 15 ; width, 17 ; length to tip of abdominal spine, 23 mm . Length of earapace (of male), 12.5 ; width, 11.5 mm .

Locality.-Gulf of California, lat. $24^{\circ} 16^{\prime}$ N., long. $110^{\circ} 22^{\prime}$ W., 21 fathoms, gray sand, broken shells, April 30, 1858 ; station 2822, U. S. Fish Commission steamer Albatross (18143).

## PYROMAIA CUSPIDATA, Stimpson.

J!yromaia cuspilata, Stimpson, Bull. Mus. Comp. Zool., It, p. 110, 1870.-A. Milne Eowards, op. cit., p. 177, pl. Xxxvi, fig. 2, 1879.
Apiomaia cuspidata, von Martens, Zool. Rec., 1871, p. 182.-Miers, Jour. Linn. Soc. London, Xiv, p. 651, 1879.
The Albutross specimens of this species are much larger than those described by Stimpson and A. Milne-Edwards. The dorsal spines are not short and tubereulous, but slender and prominent; of those on the median line, the posterior gastric, the anterior cardiac, the posterior, and the abdominal spine are longer than the others. There is an acute triangular interantenmular spine, pointing forward. The chelipeds of the adult male are stonter than those figured hy A. Milne-Edwards and are spimulons. Merus with longitudinal rows of short spines with one longer and very slender spine at its distal upper extremity. All the spinules or spines of the carpus are short. The basal portion of the propodus is tumid, longer than the fingers, which touch almost to their base where there is a slight opening. The ambnlatory legs are spinulous; the meral joints have an erect spine near the ischial joint, and short spines on the condyles articulating with the carpal joints.

In females and young the ambinatory legs are amost smooth to the tonch, but the spimes can be seen with the lens. A female, 27 mm . long, bearing eggs, from station 2601, is mique in having no spine at


[^0]:    
     with crgs (1806s).
     yellow samb, hroken sholls, station 2tit7; 1 mate (180169).
    Middle summ, mear Wilmingtom, N. C.; I. A. Fish C'ommissiom, R. F. Barll, April 1s, 1siol: 1 male (lisit).
     (11385).
    
    
    Charlotte Lartor, Flas: Union College collection (767) 1 femak.
    Sarasota bay, Fla.; Y'nion ('ollege collection (tisi) 4 males, a females.
    
     samd. hark sperks, station 2388; U. S. Fish Commission steamer Alhatross, 1885; 1 male (96告).

